

# Small Motorized Stage OSCM



Small table size stage with stepping motor. The table size is 25\*25mm.

Ideal for production and experimental applications require significantly smaller size.

- X-axis, Z-axis, Rotation and Goniometer available.
- High precision stepping motor is used to achieve precision positioning.



## Guide

- SigmaKoki's standard controller and cables compatible.
- Please select D15RP-CA series or MINI-CA-SG series depending on the controller.

Specifications			OSCM25-10X	OSCM25-5ZF	OSCM-25YAW
Part Number			OSCM25-10X	OSCM25-5ZF	OSCM-25YAW
Mechanical Specifications	Travel [mm]		10	5	Move in the counterclockwise CCW direction to ∞, and stop at near 0 degree (-2.5°) in the clockwise CW direction
	Stage Size [mm]		25x25mm	25x25mm	φ25mm
	Feed Screw, Positioning Slide		Ball screw diameter φ3mm 1mm lead	Precision ground screw φ4mm 0.5mm lead	Worm gear (1:72)
	Positioning Slide		Crossed roller	Crossed roller	Bearing method
	Guide Method		Steel	Aluminum	Aluminum / Aluminum bronze
	Finish		Black chrome	Black anodized	Black anodized
Weight [kg]			0.25	0.3	0.25
Accuracy Specifications	Resolution	(Full)	2μm/pulse	1μm/pulse	0.01° /pulse
		(Half)	1μm/pulse	0.5μm/pulse	0.005° /pulse
	MAX Speed		10mm/sec	1mm/sec	30° /sec
	Positioning Accuracy		15μm	-	0.2°
	Positional Repeatability		3μm	5μm	0.02°
	Load Capacity [N]		19.6 (2.0kgf)	9.8 (1.0kgf)	9.8 (1.0kgf)
	Moment Stiffness	Pitch ["/N·cm]	10	25	10
		Yaw ["/N·cm]	10	15	-
		Roll ["/N·cm]	5	25	-
	Lost Motion		5μm	10μm	0.05°
	Backlash [μm]		1	1	1
	Parallelism [μm]		30	60	50
	Wobble [μm]		-	-	30
Running Parallelism [μm]		20	30	-	
Pitch ["/] / Yaw ["/]		100/60	60/-	-	
Sensor	Sensor Part Number		Micro photo sensor: GP1S092HCPIF (Sharp Corporation)		BP4SWA (Metrol Co., Ltd.)
	Limit Sensor		Equipped (NORMAL CLOSE)		Touch sensor (NORMAL OPEN)
	Origin Sensor		None		

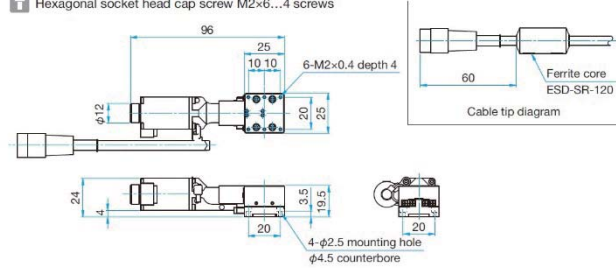
Motor / Sensor Specifications		
Motor	Type	5-phase stepping motor 0.35A/phase (Oriental Motor Co., Ltd.)
	Motor Part Number	PK513PB-C9 (□20mm)
	Step Angle	0.72°
Sensor	Power Voltage	DC5 - 24V ± 10%
	Current Consumption	40mA or lower (20mA or lower per sensor)
	Control Output	NPN open collector output DC30V or lower, 50mA or lower
	Output Logic	When shaded: Output transistor OFF (no conduction)

Compatible Driver / Controller		
Control System	Compatible Driver	SG-5MA, MC-S0514ZU, SG-514MSC
	Compatible Controller	GSC-01, GSC-02, SHOT-302GS, SHOT-304GS, SHOT-702, HIT-M/HIT-S, PGC-04-U

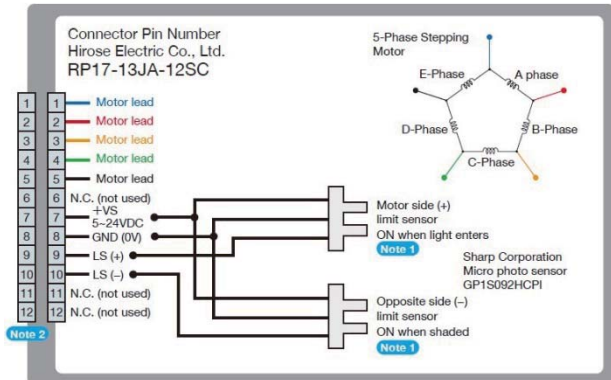
## Outline Drawing

### OSCM25-10X

Hexagonal socket head cap screw M2x6...4 screws



## Connection Diagram

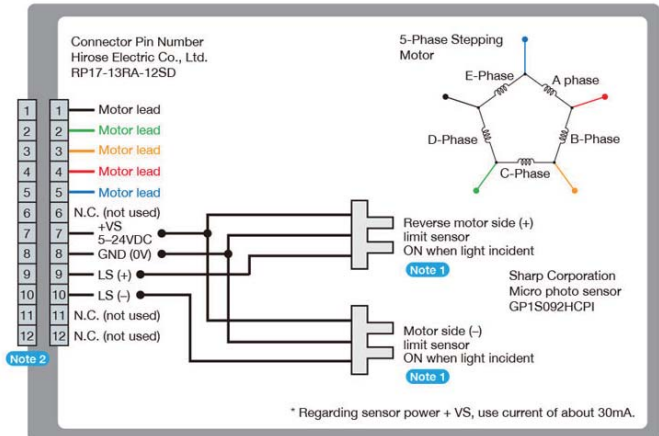
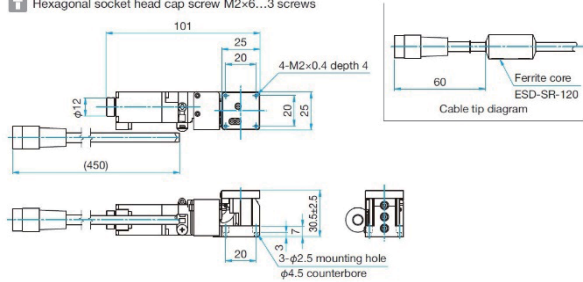


**Note 1** The motor side limit sensor is the + direction limit sensor. Motorized stages are not fitted with origin and proximity origin sensors. Limit sensors are used as origin detection sensors.

**Note 2** Compatible cable connector:  
Hirose Electric Co., Ltd. RP17-13PA-12PC/RP17-PC-122

### OSCM25-5ZF

Hexagonal socket head cap screw M2x6...3 screws

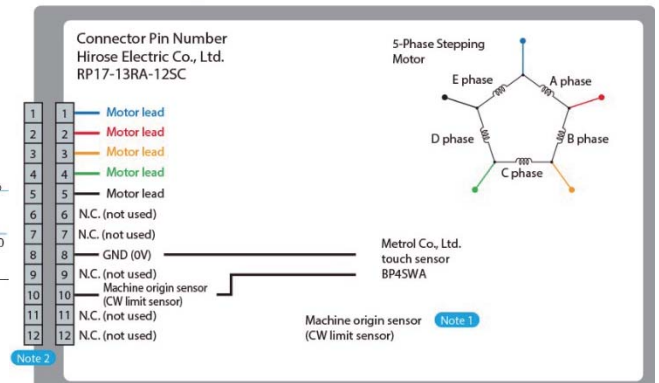
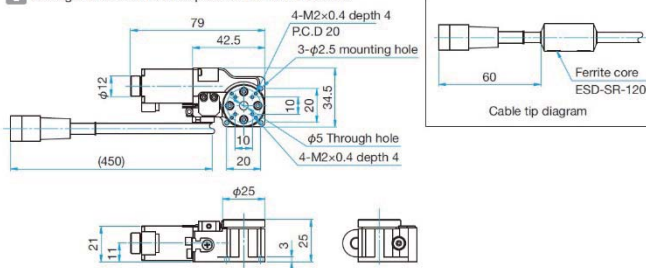


**Note 1** The limit sensor on the motor side is the minus limit sensor. Motorized stages are not fitted with origin and proximity sensors. Limit sensors are used as origin detection sensors.

**Note 2** Compatible cable connector: Hirose Electric Co., Ltd. RP17-13PA-12PC/RP17-PC-122

### OSCM-25YAW

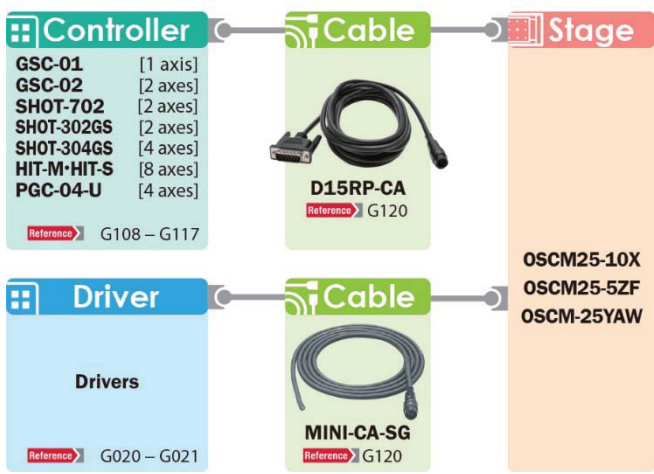
Hexagonal socket head cap screw M2x6...3 screws



**Note 1** When a travel command in the "+" direction is issued, the mounting table rotates to ∞ in the CCW (counterclockwise) direction viewed from the top surface, but it is stopped by the machine origin sensor (CW limit sensor) in the CW (clockwise) direction. Detect the machine origin using the method (MINI system) that detects the origin with a machine origin sensor (CW limit sensor).

**Note 2** Compatible cable connector: Hirose Electric Co., Ltd. RP17-13PA-12PC/RP17-PC-122

Compatible Controllers / Drivers and Cables



Comparison of TSD-401S + SGSP-13ACTB0(right) and OSCM25-10X(left)



Comparison of TSD-603 + SGSP-13ACTB0(left) and OSCM25-5ZF(right)



Comparison of OSCM-25YAW (right) and OSMS-40YAW (left)



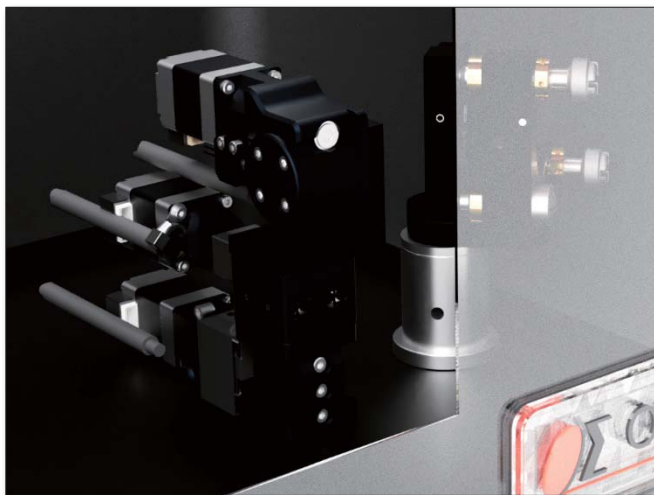
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## ■ Example



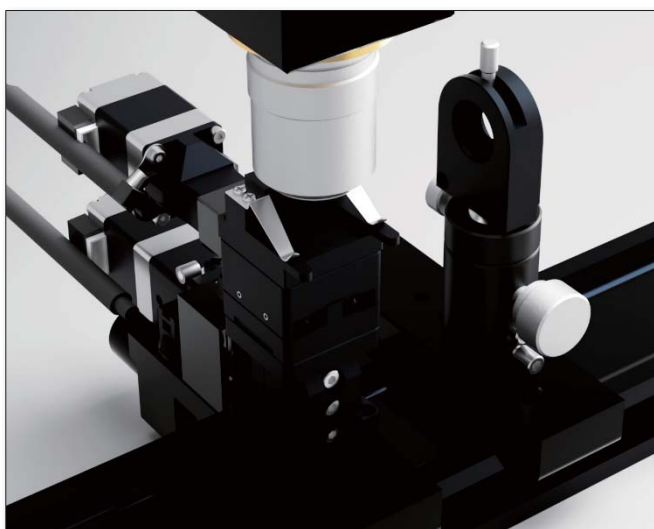
### Advantage of lightweight

The amount of displacement is minimized even moment load is applied because of its lightweight.



### Equipment Built-in

Ideal for adjusting the optical axis in equipment with limited space or automation of workpiece positioning.



### In a narrow space

Remote adjustment of workpieces available since it can be placed in an optical system where the space between elements is limited.